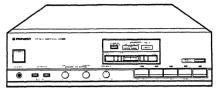


CIRCUIT DESCRIPTIONS
REPAIR & ADJUSTMENTS



ORDER NO. ARP1218 - A

STEREO AMPLIFIER

A-X320(BK)

MODEL A-X320 [BK] COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Power requirement	Export destination
HE	AC 220V, 240V (switchable)	European continent
НВ	AC 220V, 240V (switchable)	United Kingdom
HEZ	AC 220V, 240V (switchable)	West Germany

- This service manual is applicable to the HE and HB types.
- As to the HB type, please refer to page 12.
- As to the HEZ type, please refer to the additional service manual (ARP1219).

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A. TEL: (213) 420-5700 PIONEER ELECTRONIC (EUROPE) N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775 · 28 · 08 PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: (03) 580-9911

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EXPLODED VIEW AND PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- The \wedge mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designa-
- For your parts Stock Control, the fast moving items are indicated with the marks $\star \star$ and ★.
 - ★★ GENERALLY MOVES FASTER THAN★

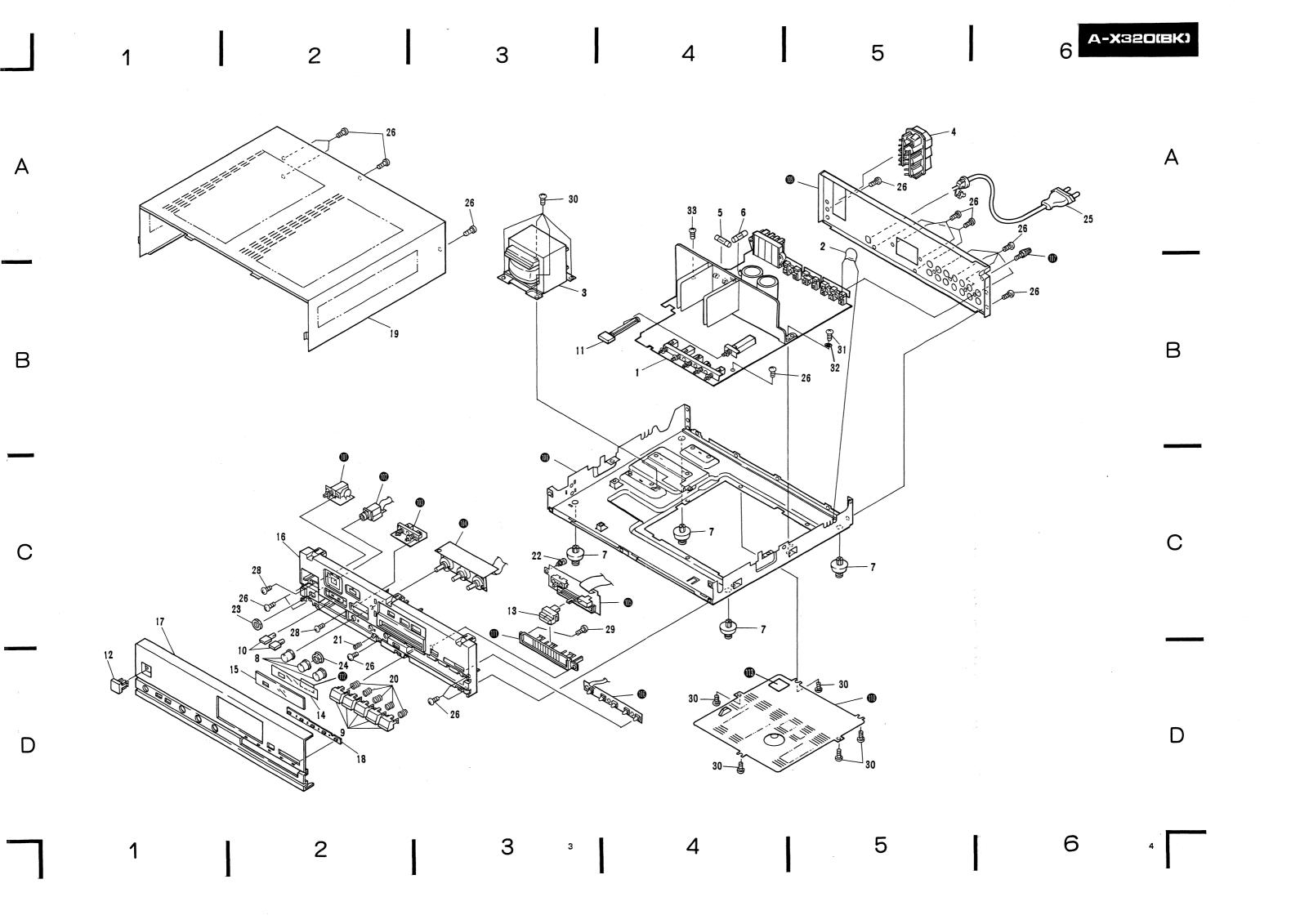
This classification shall be adjusted by each distributor because it depends on model

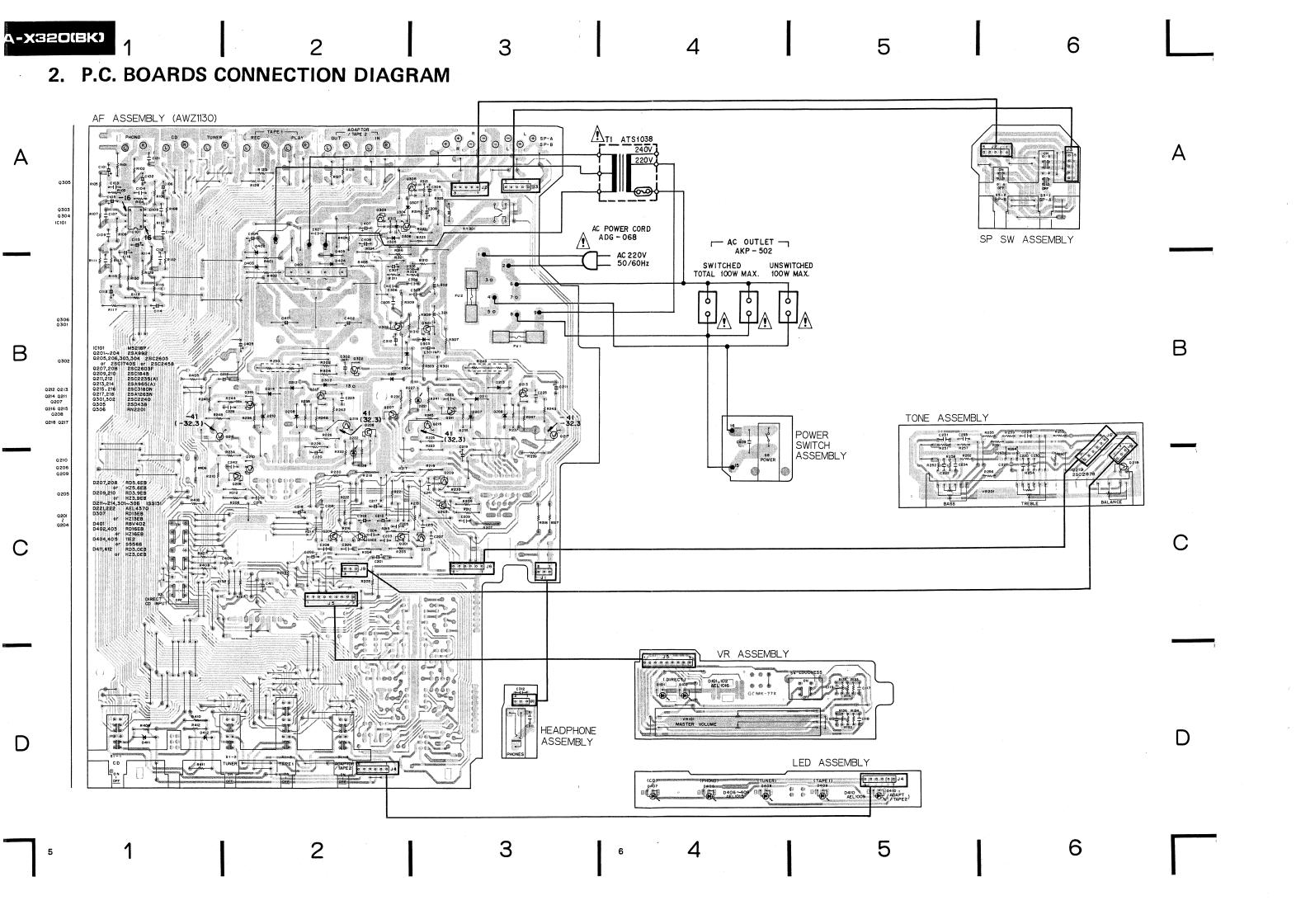
number, temperature, humidity, etc.

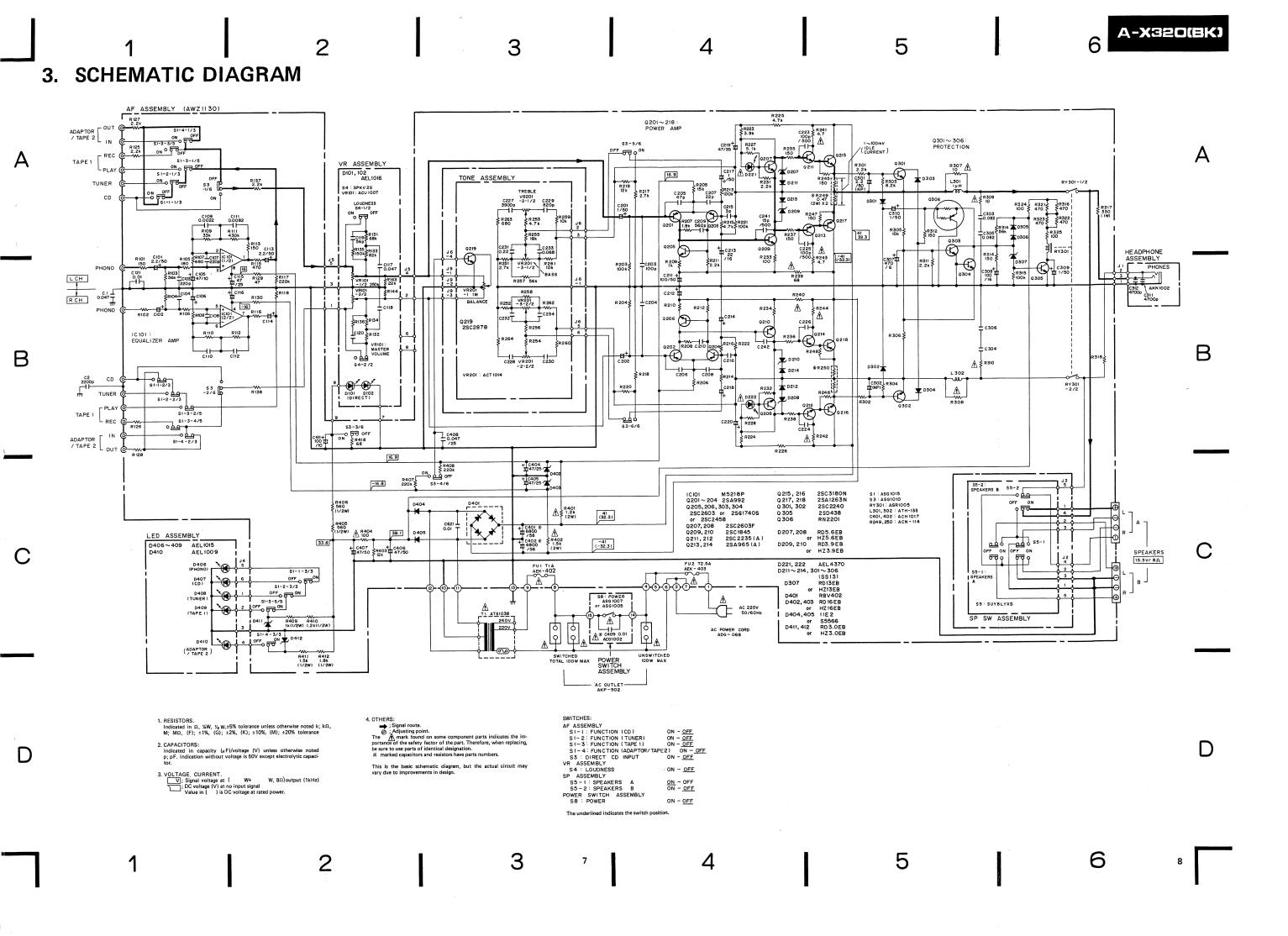
Parts marked by "©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	$\overline{1}$	AWZ1130	AF assembly	\triangle	25	ADG-068	AC power cord
	2	CKDYF473Z50	Cl Ceramic capacitor		26	BBZ30P080FZK	Screw (3×8)
Δ	3	ATS1038	T1 Power Transformer		27	VBZ30P060FMC	Screw (3×6)
Δ	4	AKP-502	3P AC outlet		28	VMZ30P060FMC	Screw (3×6)
Δ	5	AEK-508	FU1 Fuse (T1A)		29	BPZ30P080FZK	Screw (3×8)
A	6	AEK-403	FU2 Fuse (T2.5A)		30	BBZ30P060FZK	Screw (3×6)
	7	AEP-320	Leg assembly		31	BBZ30P100FZK	Screw (3×10)
	8	AAB1010	Rotary Knob		32	WS30FMC	Washer
			(BASS, TREBLE, BALANCE)		33	ABA-256	Screw
	9	AAD1056	Function Knob (FUNCTION)				
					101		Power switch assembly
	10	AAD1057	Push Knob A (SPEAKERS)		102		Headphone assembly
	11	AAD1059	Push rod		103		SP SW assembly
	12	AAD1069	Power Knob (POWER)		104		Tone assembly
	13	AAE1034	Volume Knob (MASTER VOLUME)		105		VR assembly
	14	AAK1129	Display plate B				· · · · · · · · · · · · · · · · · · ·
					106		LED Assembly
	15	AAK1130	Display plate A		107		Terminal (GND)
	- 16	AMB1091	Front panel base		108		Chassis
	17	AMB1093	Front panel		109		Rear panel
	18	AMR1090	Indicator lens		110		Bottom plate
	19	ANE1044	Bonnet case				
					111		Slider
	20	ABH1017	Coil spring		112		Tracing paper
	21	ABH1018	Coil spring		113		Barrier
	22	AMR1066	Nylon rivet				
	23	ABN-065	Holder nut				
	24	ABN-072	Flange nut (M9)				





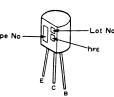


External Appearances of Transistor and ICs

M5218P

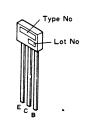


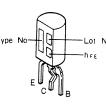
2SC2240



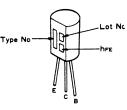
RN2201

2SA965 (A) 2SA2235 (A)

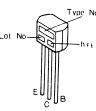




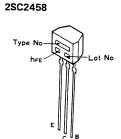
2SA992 2SC1845



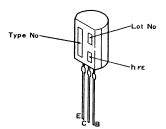
2SC2603 2SC2603F



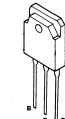
2SC1740S



2SD438

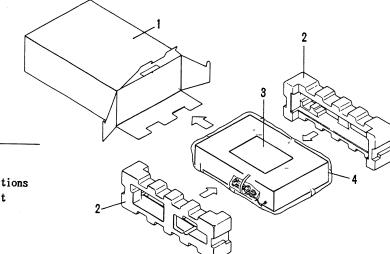


2SC3180N 2SA1263N



4. PACKING

AHD1112 Packing case AHA1024 Front rear pad ARE1033 Operating instruction	rk	No.	Part No.	Description
2 AHA1024 Front rear pad 3 ARE1033 Operating instruction		1	AHD1112	Packing case
4 477 400		2	AHA1024	
4 477 400		3	ARE1033	Operating instructions
4 mid 100 l'orychiylene sneet		4	AHG-188	Polyethylene sheet



5. ELECTRICAL PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J =5%, and K = 10%

,0,00,000	12 10/0/.		
60Ω	56×10^{1}	561	RD1/4PS 5 6 1
$^{l}7k\Omega$	47×10^{3}		
0.5Ω	0R5		RN2H 🛈 🖫 🗓 K
Ω	010		

- Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors). $5.62k\Omega$ 562×10^{1} $56\overline{2}1...$ RN1/4SR \square \square \square F
- The A mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks $\star \star$ and \star . * * GENERALLY MOVES FASTER THAN *
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavail-

Miscellaneous Parts

P. C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	TONE assembly LED assembly VR assembly HEADPHONE assembly SP SW assembly AF assembly POWER SW assembly	Non supply Non supply Non supply Non supply Non supply Non supply AWZ1130 Non supply
OTHE	ERS	

Mark	Symbol & Description	Part No.
⚠ ★	T1 Power transformer	ATS1038
	C1	CKDYF473Z50
<u> </u>	3P AC outlet	AKP-502
	FU1 Fuse (T1A)	AEK-402
△★★	FU2 Fuse (T2.5A)	AEK-403
A \	AC Power cord	ADG-068

TONE Assembly

SEMI	CONDUCTOR	
Mark	Symbol & Description	Part No.
**	Q219	2SC2878

CAPACITORS

Mark	Symbol & Description	Part No.
	C229, C230	CQMA821K50
	C231,C232	CQMA224K50
	C233, C234	CQMA683K50
	C227, C228	CQMA392K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
*	VR201 Variable (BASS, TREBLE, BALANCE)	ACT1014
	R251—R264	RD1/8PM□□□J

LED Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
*	D410	AEL1009
*	D406D409	AEL1015

VR Assembly

SEMICONDUCTORS

Symbol & Description

iviark	Symbol & Description	Part No.
*	D101, D102	AEL1016
SWIT	СН	

*	S4 Push switch (LOUDNESS)	SPKV2S
CAPA	CITORS	
Mark	Symbol & Description	Part No.
	C119, C120	CCCSL560J50
	C117, C118	(CCDSL560J50) CKCYX473M25 (CKDYX473M25)

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark Symbol & Description Part No.		Part No.
*	VR101 Slide variable (250k) (MASTER VOLUME)	ACU1007
	R131—R136	RD1/8PM□□□J

HEADPHONE Assembly CAPACITORS

iviark	Symbol & Description	Part No.
	C311,C312	CKCYB472K50
OTHE	RS	
Mark	Symbol & Description	Part No.
	Phone jack (PHONES)	AKN1002

SP SW Assembly SWITCH

Mark	Syr	nbol & Description	Part No.
*	S 5	Push switch (SPEAKERS)	SUY8LYXS



AF Assembly (AWZ1130) SEMICONDUCTORS

Mark	Symbol & Description	Part No.		0.1.10.5.	
	IC101	M5218P	Mark	Symbol & Description C103, C104, C107, C108	Part No. CCCSL221J50
	9306	RN2201		0103,0104,0107,0106	(CCDSL221J50)
**	Q217, Q218	2SA1263N		C205, C206	CCCSL470J50
	Q213, Q214	2SA965(A)		0200, 0200	(CCDSL470J50)
**	Q201—Q204	2SA992		C301, C302	CEANP2R2M50
**	Q209, Q21 0	2SC1845		C309, C310	CEASO10M50
	Q211,Q212	2SC2235 (A)		C411	CEAS101M10
**		2SC2240		C308	CEAS101M16
**	9205, 9206, 9303, 9304	2SC2603		C211,C212	CEAS101M50
		(2SC1740S) (2SC2458)		C101, C102, C113, C114	CEAS2R2M50
-44-	0007 0000	0000000		C105, C106	CEAS470M10
	Q207, Q208 Q215, Q216	2SC2603F		C115, C116, C404, C405	CEAS470M25
**	Q305	2SC3180N 2SD438		C219, C220	CEAS470M35
	D221, D222	250456 AEL-437		C406, C407	CEAS470M50
- `	D401	RBV402		C307	CEAS471M6
^	D-101	ND440Z		C201, C202, C217, C218	CEVACIONEC
*	D307	RD13EB		C213, C214	CEYA010M50 CEYA220M16
		(HZ13EB)		C121	CKCYB103K50
*	D402, D403	RD16EB		OLLI	(CKDYB103K50)
		(HZ16EB)		C209, C210	CKCYB561K50
*	D411, D412	RD3.OEB		5250, 5210	(CKDYB561K50)
		(HZ3.OEB)			(0.00100700)
	· · · ·	1		C408	CKCYX473M25
*	D209, D210	RD3.9EB			(CKDYX473M25)
	7007 7000	(HZ3.9EB)		C109, C110	CQMA222J50
*	D207, D208	RD5.6EB		C111,C112	CQMA822J50
	DOLL DOLL DOLL DOLL	(HZ5.6EB)		C303—C306	CQMA823K50
*	D211—D214, D301 —D306	188131	DECI	STORS	
	D404, D405	11E2			
	D 10 1, D 100	(S5566)		When ordering resistors, convert	
		(00000)		into code form, and then rewrite th	ie part no. as before.
SWII	CHES AND RELAY		Mark	Symbol & Description	Part No.
Mark	Symbol & Description	Part No.		$R249, R250 (0.47 \Omega/2W)$	ACN-114
*	S3 Push switch	ASG1010		R405, R406, R409—R412	RD1/2PM = = J
	(DIRECT CD INPUT)		Δ	R239, R240, R307—R310, R404	RD1/4PMFL J
	S1 Push switch (FUNCTION)	ASG1015		R245—R248	RD1/4PMF151J
*	RY301 Relay	ASR1005		R103, R104, R305, R306, R311, R313,	RD1/8PM□□□J
COIL	\$			R315	
Mark	Symbol & Description	Part No.	Δ	D041 D044	DD44 / AD6 ADE7 T
	L301, L302 Inductor (1 μ H)	ATH-133	ΔÅ	R241—R244	RFA1/4PS4R7J
	LOUI, LOUZ INductor (I p ii)	H111-100		R227, R228, R231, R232	RN1/4PQ 🗆 🗆 🗆 🗗 F
			⚠	R317, R318 R401	RS1LMF331J RS2LMF122J
CAPA	CITORS		<u> </u>	R402	RS2LMF152J
Mark	Symbol & Description	Part No.	- 23	Other resistors	RD1/4PM \square \square \square J
	C401, C402 Electrolytic	ACH1018	071157		1101/ 11 11 0
	(6800 \(\mu \) F/56V)	HOHIVIO	OTHER	18	
	C215, C216	CCCSL030C50	Mark	Symbol & Description	Part No.
		(CCDSL030C50)		4P Terminal	AKB-115
	C203, C204	CCCSL101J50		(TAPE1, ADAPTOR/TAPE2)	
		(CCDSL101J50)	•	6P Terminal (INPUT)	AKB-117
				8P Terminal (SPEAKERS)	AKE-111
	C223—C226	CCCSL101K500			
	CO41 CO40	(CCDSL101K500)	POWE	R SW Assembly	
	C241,C242	CCCSL150K500	SWIT		
	C007 000	(CCDSL150K500)	Mark	Symbol & Description	Part No.
	C207, 208	CCCSL220J50		S8 Push switch (POWER)	ASG1007
		(CCDSL220J50)	<u>ш</u> д	-5 . don on ton (tombh)	(ASG1005)
					(HOGIOO)
			CAPA	CITOR	
			Mark	Symbol & Description	Part No.
			$\overline{\mathbb{A}}$	C409 Ceramic (0.01 \(\mu \)F)	ACG1002



6. FOR HB TYPE

The A-X320 [BK]/HB type is the same as the A-X320 [BK]/HE type with the exception of the following sections.

Contrast of miscellaneous parts

Mark	Sumbol & Description	Part	No.	
- India	Cambol & Description	HE type	HB type	Remarks
△★★ △★★ △	FU1 Fuse (T1A) FU2 Fuse (T2.5A) 3P AC outlet Operating instructions	AEK-402 AEK-403 AKP-502 ARE1033	AEK-508 AEK-512 AKP-505 ARB1040	

Line Voltage Selection for HB Type

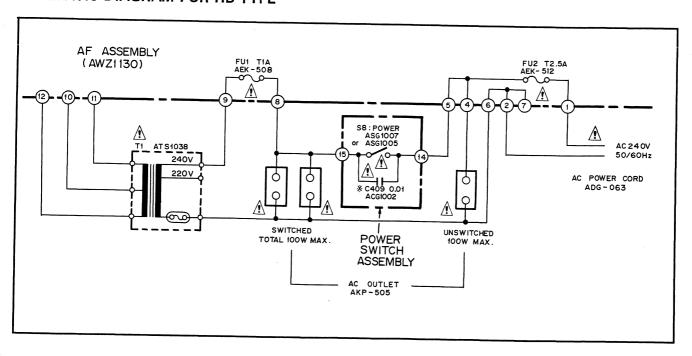
Line voltage can be changed with following steps.

- 1. Disconnect the AC power cord.
- 2. Remove the top cover.
- 3. Change the connection wire as shown in the schematic diagram for HB type.
- 4. Stick the line voltage label on the rear panel.

Parts list

Part no.	Description	
AAX-193	220V label	
AAX-192	240V label	

SCHEMATIC DIAGRAM FOR HB TYPE







(I) PIONEER®



ORDER NO. ARP1219 - A

STEREO AMPLIFIER

A-X320(BK) HEZ

- For servicing these types, please refer to the A-X320 (BK) service manual (ARP1218) with the exception of this additional service manual.
- This additional service manual is applicable to the A-X320 [BK]/HEZ type.

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES

- Parts without part number cannot be supplied.
- The
 \(\text{\Lambda} \) mark found on some component parts indicates the importance of the safety
 factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
 - ★★ GENERALLY MOVES FASTER THAN★
 - This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

The A-X320 [BK]/HEZ type is the same as the A-X320 [BK]/HE type with the exception of the following sections.

Mark	Symbol & Description	1 & Description Part No. HE type HEZ type		Remarks
	Display filter Screw with tapping C3 Ceramic capacitor (4700p/150V)		AAK1163 ABA-115 ACG-009	
	Polyethylene sheet	AHG-131	AHG-188	Packing
	Operating instruction (English, German,French, Italian)	ARE1033		
	Operating instruction (German)	• • • •	ARC1026	
	AF assembly	AWZ1130	AWZ1206	
	R1		RD1/4PM100J	

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A. TEL: (213) 420-5700 PIONEER ELECTRONIC (EUROPE) N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775 28 08 PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: (03) 580-9911

ISV @ Aug, 1986 Printed in Japan



2. ELECTRICAL PARTS LIST

NOTES

• When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56×10^{1}	561	RD1/4PS 🗓 📵 🗓 J
$47k\Omega$	47×10^{3}	473	
0.5Ω	0R5		
1Ω	010	•••••	

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

 $5.62k\Omega$ $562 imes \Hat{10}^{1}$ 5621... RN1/4SR \Box \Box \Box \Box \Box F

- The A mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when
 replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★. ★ ★ GENERALLY MOVES FASTER THAN ★

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Parts marked by "⊚" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

AF Assembly (AWZ1206)

The AF Assembly AWZ1206 (HEZ type) is the same as the AWZ1130 (HE type) with the exception of the following sections.

Mark	Symbol & Description	Part AWZ1130	No. AWZ1206	Remarks
	C103, C104 C107, C108 C601 — C614 C615 — C620 C621 (0.01/150V) L601 — L604 (1 \(\mu\)H) R101, R102 R105, R106 R601 — R608 R609, R610	CCCSL221J50 CCCSL221J50	CKCYB331K50 CKCYB391K50 CKCYB391K50 CQMA472K50 ACG-019 ATH-133 RD1/4PM152J RD1/4PM221J RD1/4PM102J RD1/4PM4R7J	

